



Moving People Out of Harm's Way

Full Mitigation Best Practice Story

Kenosha County, Wisconsin

Kenosha County, WI – An excerpt from a May 2000 emergency bulletin announced: “Residents are strongly urged to evacuate until river levels subside.... Rapidly-rising swift currents will provide an extreme danger to residents and responders.” This announcement is a common occurrence for residents of Kenosha County, Wisconsin living along the Fox River between Highway 50 and Highway F. Low-lying land in this region is plagued by frequent, dangerous floods that threaten the safety of the residents and cause severe damage to homes.



The Illinois Fox River rises near Menomonee Falls, Wisconsin and flows through Waukesha, Racine, and Kenosha Counties in southeast Wisconsin for a total of 70 miles before entering Illinois. There are two rivers in Wisconsin called the Fox River. This particular river is designated as the Illinois Fox River by local residents as it flows out of Wisconsin and into Illinois. Flooding is common in Kenosha County, Wisconsin along the river, especially near the Towns of Wheatland and Salem and the Village of Silver Lake.

During the middle of the 20th century, the riverside was valued as a vacation or weekend get-away spot and many people from nearby cities built rustic cabins on the banks of the river. Later, as the area's population grew, some families built year-round residences and even more constructed weekend cabins. The waterfront properties were occasionally flooded, but the owners kept coming back to clean up and rebuild. The river area provided the scenic beauty and outdoor recreation they treasured.

The private property in this floodplain has created an “urban interface” problem similar to those in the forested lands of America's western states. Having a population adjacent to or in an area that frequently experiences natural disasters puts stress on local emergency management and law enforcement as well as public works.

When extensive, heavy rains enter the watershed for the Illinois Fox River, Kenosha County emergency management personnel and law enforcement officers keep steady contact with the National Weather Service to receive constant updates about rainfall and river-level predictions. When the river rises to hazardous flood-stage levels, the County Executive issues an emergency declaration to set in motion safety procedures to protect citizens in the path of floodwaters. During emergency declarations, county law enforcement officers personally warn residents of the imminent danger of fast-moving floodwaters and are prepared to provide help to evacuate them to safety if the need arises. The officers patrol the flooding areas in four-wheel drive vehicles carrying personal flotation devices in case people need assistance. During rescue efforts in the 1994 floods, a rescue boat flipped over in a fast-running current. Luckily, no one was killed in the incident.

Since 1994, there have been many damaging floods in the Fox River floodplain of Kenosha County. From 1994 to the summer of 2008 there have been eight Federally declared disasters in the region. Monetary damages accrued by flood victims included hotel bills, lost wages, costs associated with cutting down trees, using power generators, repair of damaged foundations and siding, and debris cleanup. In addition to the personal property damage endured by the residents, recovery efforts have cost the county hundreds of thousands of dollars.

In April 1969, the Southeastern Wisconsin Regional Planning Commission (SEWRPC) issued its “Fox River Watershed Study,” a culmination of a three-year study of the Fox River watershed in southeastern Wisconsin. The purpose of the study was to prepare a comprehensive plan for the physical development of the watershed designed not only to solve the problems of flooding, water pollution, and changing land use within the watershed, but also to beneficially develop the total land area and water resources of the watershed. Its goal was “to provide an environment for human life within the watershed which is attractive, as well as safe and healthful.”

At the time of the original study, land use and housing development ideas and regulations were drastically different from those of today. Wetlands are now more highly valued and protected than in the past. However, new zoning ordinances adopted in the early 1970s prohibit new building within the 100-year floodplain. The original study contains a summary of the factual findings of required inventories which were completed as a part of the study. Also included in the original study are forecasts of future growth and development within the watershed. The inventories within the study provided a benchmark of historic data upon

which future studies of the watershed can be built.

In 1994, Kenosha County officials initiated a plan to help people move out of the flood-prone area, which is mapped as the 100-year floodplain of the Illinois Fox River. By May 2004, when yet another major flood caused another disaster declaration, fewer homes and residents were at risk because 56 property owners had participated in the Fox River Flood Mitigation Program over that 10-year period. The Kenosha County Housing Authority administers the program, with staff support provided by SEWRPC. Through this program, homes are bought and demolished and the land cleared and seeded to be left as undeveloped open space.

The 2007 Wisconsin floods hit Kenosha County hard again. While the disaster of 2004 had water four feet above flood stage, the 2007 flood reached 14.98 feet, 4.9 feet over flood stage. Even though the water was higher than before, fewer homes and residents were in danger because more property owners had opted for the buyout program and had already moved to higher ground. Those who hadn't participated in the program suffered more than they had in the 2004 flood. One home, still occupied, on 71st Street just a few yards from the river, caught fire during the height of the flood and burned to the water line because firefighters could not reach the house. Some homes were damaged when water came into the crawl spaces beneath them; although the water didn't reach the living areas, it was absorbed through the wooden framing. With the summer warmth, mold and mildew quickly developed inside. Additionally, some homes were constructed with utilities in the basements or crawl spaces. The flooding that may not have reached the interior of the homes ruined furnaces, well pumps, and water heaters.

While the 2007 floods made some people think they had seen the worst of it, June 2008 brought even greater devastation. Flood gauges measured the maximum heights at 15, 16, and 18 feet – five to eight feet above flood stage. By the time the 2008 floods hit, 72 property owners had already participated in the Fox River Flood Mitigation Program, sold their homes for the estimated fair market value, and moved to safer quarters.

John Meland, Chief Economic Development Planner for SEWRPC, has watched with compassion as homeowners struggle with the idea of selling their flood-prone properties. He also has seen the positive results of the buyout program as floodwater sweeps harmlessly over vacant land where houses used to sit. Meland, looking at a recent acquisition, a house demolished and hauled away and the newly seeded ground covered with mulch, exclaimed, "Seventy-two down, 104 to go," referring to the properties still in the 100-year floodplain. "Homeowners are not being pushed out or forced to sell their properties," Meland said, "It's a voluntary program." The only forceful urging is coming from the river itself, taking back more and more adjacent land with each flood.

Although Kenosha County and many other upper Midwest communities have a long history of flood damage, the catastrophic Mississippi River flood of 1993 made money available to begin major mitigation projects. As of August 2008, this program has totaled approximately \$7.4 million from combined sources including the Federal Emergency Management Agency's (FEMA's) Hazard Mitigation Grant Program (HMGP), Wisconsin Emergency Management, the Wisconsin Department of Natural Resources, and Community Development Block Grants - Emergency Assistance Program (CDBG-EAP) from the Wisconsin Department of Commerce.

The Fox River Flood Mitigation Program has provided multiple benefits, saving the county money that it would have spent on road repairs and, over time, for first responders that serve the residents. Additional residential benefits are safety and peace of mind that residents are not living in homes that could be repeatedly flooded.

Activity/Project Location

Geographical Area: **Single County in a State**

FEMA Region: **Region V**

State: **Wisconsin**

County: **Kenosha County**

City/Community: **Silver Lake**

Key Activity/Project Information

Sector: **Public/Private Partnership**
Hazard Type: **Flooding**
Activity/Project Type: **Acquisition/Buyouts; Building Codes**
Structure Type: **Wood Frame**
Activity/Project Start Date: **01/1994**
Activity/Project End Date: **Ongoing**
Funding Source: **Flood Mitigation Assistance (FMA); Hazard Mitigation Grant Program (HMGP); State sources**
Funding Recipient: **Local Government**
Application/Project Number: **994**

Activity/Project Economic Analysis

Cost: **\$7,000,000.00 (Actual)**
Non FEMA Cost:

Activity/Project Disaster Information

Mitigation Resulted From Federal Disaster? **Yes**
Federal Disaster #: **994 , 07/02/1993**
Federal Disaster Year: **1993**
Value Tested By Disaster? **Yes**
Tested By Federal Disaster #: **1131 , 08/02/1996**
Repetitive Loss Property? **Yes**

Reference URLs

No URLs were submitted

Main Points

No Main Points were entered.



Riverside Drive water sheeting



vacant lot & flooded house



Acquired house before demolition



Living room mold